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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/700,367	11/15/2000	Rainer Karer	0775/000003	6131

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NOVAK DRUCE DELUCA & QUIGG, LLP  
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WASHINGTON, DC 20005

EXAMINER
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NECKEL, ALEXA DOROSHENK

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 08/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/700,367

Applicant(s)

KARER ET AL.

Examiner

Alexa D. Neckel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-8 and 10-15 is/are pending in the application.  
4a) Of the above claim(s) 11-15 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-4, 6-8 and 10 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 31 May 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. The drawings were received on May 31, 2005. These drawings are acceptable until the objection below is resolved.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the gas distributor plate having orifices more than **90%** total surface area (claim 3) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Election/Restrictions***

3. This application contains claims 11-15 drawn to an invention nonelected with traverse in the reply filed October 25, 2004. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

***Claim Rejections - 35 USC § 102***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1, 2, 4, 6 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Jorgensen et al. (6,113,862).

With respect to claim 1, Jorgensen et al. disclose an apparatus comprising:

a reactor (1) in the form of a vertical tube (see figures 1 and 2) with a region of transition (area below 2) in the lower section of the tube, followed by a reaction zone (2a and 3a) which is followed by a calming zone (4);

a recycle (circulation) line (5) with a compressor (6) and a heat exchanger (7);

a grid (gas distributor plate) (2) in the lower section/region of transition of the reactor (1) wherein more than 20% of the surface area is open space (col. 4, lines 20-23); and

wherein there is no internal heat exchanger in the reactor (see figure 1).

With respect to claim 2, there is no distributor plate in the immediate area where the recycle line (5) connects to the reactor (1).

With respect to claim 4, Jorgensen et al. discloses wherein the grid comprises evenly spaced openings (col. 6, lines 60-63) of the same size with flow deflectors (col. 5, lines 63-66) and as such, would inherently bring about a substantially homogeneous introduction of gas flow into the bed.

With respect to claim 6, Jorgensen et al. disclose wherein the reactor diameter can be between 2.4 and 5 m (col. 5, lines 18-19).

With respect to claim 10, Jorgensen et al. further discloses wherein the recycle gas may be passed through a cyclone separator prior to being introduced to a compressor (col. 7, lines 1-16).

***Claim Rejections - 35 USC § 103***

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jorgensen et al. (6,113,862)

With respect to claim 3, Jorgensen et al. discloses that the fraction of the grid which can be open can be adjusted (col. 5, lines 36-39) and that different pressure drops are achieved by varying the openings of the grid. Jorgensen et al. contemplates the advantages of a grid where less than 25% of the grid is obstructed (col. 6, lines 14-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teaching within Jorgensen et al. to adjust the percentage of opening area of the grid (2) as such is recognized by Jorgensen et al. to be a result effective variable and since Jorgensen et al. also contemplates grids with

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open areas of more than 75%. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the open area of the primary grid (2) of Jorgensen et al. to obtain desired operational conditions (In re Boesch, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 223).

8. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jorgensen et al. (6,113,862) in view of Lubbock (2,636,712).

With respect to claim 7 and 8, Jorgensen et al. fails to disclose a closable flap with holes at the region of transition (where the circulation inlet enters the reactor).

Lubbock teaches a slide valve (equivalent to a flap) with orifices (col. 2, lines 18-28) used to control the flow of solids in suspension (col. 1, lines 1-6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the slide valve of Lubbock in the area where the circulation gas inlet (9) and the reactor (1) connect in order to control the amount of particles which would fall through the grid and into the circulation line (col. 2, lines 31-39).

With further respect to claim 8, Lubbock fails to disclose a specific size range for the orifices but Lubbock does disclose that the sizes of the orifices are variable (col. 2, lines 18-28). Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the orifice sizes necessary to obtain desired operational conditions (In re Boesch, 617 F.2d. 272, 205 USPQ 215

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(CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 223).

### ***Response to Arguments***

#### Election/Restriction

Applicant continues to argue the restriction requirement. The restriction was made final in the previous Office Action and therefore the arguments are moot.

#### Drawings

The drawings overcome a majority of the objects, but continue to be objected to as the features of claim 3, addressed above, are still not shown in the figures.

#### 35 USC 112, First and Second Paragraph

The rejection of claims 4 and 5 under 35 USC 112, second paragraph, and claims 1-10 under 35 USC 112, first paragraph are withdrawn due to applicant's amendment to the claims.

#### Claim Objections

The objection to claim 4 is withdrawn due to applicant's amendment to the claim.

#### 35 USC 102

Applicant argues that Govoni et al. does not disclose a calming zone.

The examiner agrees, but also notes that this is a limitation that has been added to claim 1. As such, the rejection is withdrawn.

Applicant argues that Jorgensen et al. does not disclose the now claimed arrangement.

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As the claims have been amended, a new rejection based on Jorgensen et al. has been provided above.

35 USC 103

Applicant argues that Jorgensen et al. in view of Lachance et al. does not disclose the now claimed arrangement.

As the claims have been amended, a new rejection based has been provided above.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa D. Neckel whose telephone number is 571-272-



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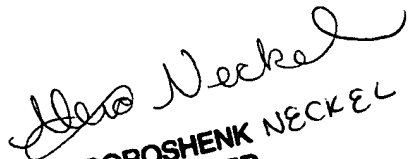
1446. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alexa D. Neckel  
Examiner  
Art Unit 1764

August 11, 2005

  
ALEXA DOROSHENK NECKEL  
PRIMARY EXAMINER